

WORLD INTELLECTUAL PROPERTY ORGANIZATION International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7:

A61K 9/127, 38/19, 39/39, 38/28

(11) International Publication Number:

WO 00/44350

(43) International Publication Date:

3 August 2000 (03.08.00)

(21) International Application Number:

PCT/EP00/00598

(22) International Filing Date:

26 January 2000 (26.01.00)

(81) Designated States: AU, BR, CA, CN, HU, JP, KR, MX, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

(30) Priority Data:

99101480.4

27 January 1999 (27.01.99)

Published

EP

Before the expiration

(71) Applicant (for all designated States except US): IDEA AG [DE/DE]; Frankfurter Ring 193a, D-80807 Munich (DE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): CEVC, Gregor [DE/DE]; Erich-Kästner-Weg 16, D-85551 Kirchheim (DE). CHOPRA, Amla [IN/IN]; A/21A, Ashok Vihar, Ohase 1, Delhi 110 052 (IN). STIEBER, Juliane [DE/DE]; Clemensstrasse 74, D-80769 Munich (DE).

(74) Agent: VOSSIUS & PARTNER; P.O. Box 86 07 67, D-81634 Munich (DE).

With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of

amendments.

(54) Title: TRANSNASAL TRANSPORT/IMMUNISATION WITH HIGHLY ADAPTABLE CARRIERS

(57) Abstract

The invention deals with the transport of preferably large molecules across nasal mucosa by means of specially designed, highly adaptable carriers loaded with said molecules. One of the purposes of making such formulations is to achieve non-invasive systemic delivery of therapeutic polypeptides, proteins and other macromolecules; the other intent is to overcome circumstantially the blood-brain barrier by exploiting the nasal cavity to enter the body and then to get access to the brain. A third intent is to achieve successful protective or tolerogenic immunisation via nasal antigen or allergen administration.

INTERNATIONAL SEARCH REPORT

Inter: nal Application No PCT/EP 00/00598

A. CLASSI IPC 7	FICATION OF SUBJECT MATTER A61K9/127 A61K38/19 A61K	39/39 A61K38/28			
According to	n International Patent Classification (IPC) or to both national of	lassification and IPC			
	SEARCHED				
Minimum do IPC 7	cumentation searched (classification system followed by class A61K C07K	sification symbols)			
Documental	tion searched other than minimum documentation to the exten	t that such documents are included in the fields e	earched		
Electronic d	ata base consulted during the International search (name of c	data base and, where practical, search terms used			
C. DOCUM	ENTS CONSIDERED TO BE RELEVANT				
Category °	Citation of document, with indication, where appropriate, of	the relevant passages	Relevant to claim No.		
X	EP 0 475 160 A (CEVC GREGOR) 18 March 1992 (1992-03-18) cited in the application page 1, line 1-6 examples claims	-/	4,5		
	her documents are listed in the continuation of box C.	X Patent family members are listed	d in annex.		
	stagories of cited documents :	"T" later document published after the int or priority date and not in conflict with	emational filing date		
consider con	ent defining the general state of the art which is not sered to be of particular relevance document but published on or after the international state and which may throw doubts on priority claim(s) or is cited to establish the publication date of another or or other special reason (as specified) ent referring to an oral disclosure, use, exhibition or means ent published prior to the international filing date but han the priority date claimed	cited to understand the principle or the invention "X" document of particular relevance; the cannot be considered novel or cannot involve an inventive step when the difference of particular relevance; the cannot be considered to involve an independence of the cannot be considered to involve an independence of the cannot be combined with one or ments, such combination being obvious the art.	citéd to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such document, such combined with one or more other such documents, such combination being obvious to a person skilled		
Date of the	actual completion of the international search	Date of mailing of the international se	earch report		
] 1	5 June 2000	28/06/2000			
Name and	mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Muller, S			

INTERNATIONAL SEARCH REPORT

Intern nai Application No
PCT/EP 00/00598

	<u> </u>	PCT/EP 00/00598	
(Continu	ation) DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	
A	DATABASE MEDLINE 'Online! US NATIONAL LIBRARY OF MEDICINE (NLM), BETHESDA, MD, US ALMEIDA A J ET AL: "Nasal delivery of vaccines." XP002107393 abstract -& JOURNAL OF DRUG TARGETING, (1996) 3 (6) 455-67. REF: 125 JOURNAL CODE: B3S. ISSN: 1061-186X., XP002109107 Switzerland abstract page 458 -page 462	1-53	
Α	WO 90 09385 A (LIPOSOME CO INC) 23 August 1990 (1990-08-23) page 3, line 17-34 page 9, line 6-17 claims	1	
A	WO 92 04009 A (UNIV LONDON PHARMACY) 19 March 1992 (1992-03-19) page 1, line 3-7 page 3, line 21-32 page 6-7; example 1 page 14; example 2 claims	1-53	
A	CEVC G: "Transfersomes, liposomes and other lipid suspensions on the skin: permeation enhancement, vesicle penetration, and transdermal drug delivery" CRITICAL REVIEWS IN THERAPEUTIC DRUG CARRIER SYSTEMS, vol. 13, no. 3-4, 1996, pages 257-388, XP002107366 page 316 -page 321	1	

INTERNATIONAL SEARCH REPORT

information on patent family members

Inter: nal Application No
PCT/EP 00/00598

Patent document cited in search report		Publication date		etent family member(s)	Publication date
EP 0475160	A	18-03-1992	DE 4107152 A		10-09-1992
EI 04/5100	^	10 00 1001	DE	4107153 A	10-09-1992
			ĀT	134133 T	15-02-1996
			CA	2067754 A	25-02-19 92
			DE	59107402 D	28-03-1996
			DK	475160 T	08-07-1996
			WO	9203122 A	05-03-1992
			ËŠ	2085936 T	16-06-1996
			JP	5502042 T	15-04-1993
WO 9009385	Α	23-08-1990	AT	138071 T	15-06-1996
MO 3003303	^	20 00 1550	AU	639228 B	22-07-1993
			AŬ	5173690 A	05-09-1990
			CA	2045469 A	18-08-1990
		•	DE	69027022 D	20-06-1996
			DE	69027022 T	28-11-1996
			DK	458894 T	07-10-1996
			EP	0458894 A	04-12-1991
			ES	2089011 T	01-10-1996
			JP	5500203 T	21-01-1993
			KR	157428 B	16-11-1998
			US	5200393 A	06-04-1993
WO 9204009	Α	19-03-1992	EP	0548210 A	30-06-1993
MU 3207003	п	2, 00	JP	6505701 T	30-06-1994